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Monograph of the Elaeagnaceae.—This elaborate paper by SERVETTAZ extends through 420 pages, and is a remarkable attempt by a single student to investigate every phase of a whole family. Naturally it is encyclopedic, and therefore cannot be reviewed in any real sense, but its general contents may be indicated. The first part[17] is concerned exclusively with the taxonomy of the family. The author recognizes two tribes and three well-marked genera: Hippophaë, Shepherdia, and Elaeagnus. The first genus is represented by a single species and three subspecies, the second by three species, and the third by 39 species, numerous subspecies and varieties, several of which are new to science. The genus Elaeagnus is divided into two sections, based on the time of flowering and the persistency of the leaves, and a very clear key leads to the species under which is given further a key to the subspecies and occasionally to the varieties, thus greatly facilitating the use of the monograph, particularly in the interpretation of the subordinate categories. Bibliography and synonomy, for the most part, are very fully given, but the few citations of American exsiccatae suggest a paucity of material as well as unfamiliarity with the names of American collectors. For instance, on page 21 we find under *Shepherdia canadensis* "no. 1205 Waghome," which is doubtless intended for WAGHORNE. Again, on the same page is noted "Charlotte Vermont no. 2452 Hall et Harbour;" this citation needs verification; it suggests a record made from a misleading label (HALL AND HARBOUR collected this species in Colorado and distributed it under 506). Furthermore, under *S. argentea* we find "Oregon no. 2013 Cusik," which is meant for the collection of WILLIAM C. CUSICK. These are minor details; nevertheless, they are inaccuracies in citation, and such inaccuracies often lead to confusion and are sometimes difficult of elimination. The descriptions are well drawn, the keys are clear, and the text figures are numerous. On the whole, therefore, the taxonomic part of the work represents a comprehensive and commendable study of the group.—J. M. GREENMAN.

The second part[18] deals with "anatomy and biology." The three genera above named are treated separately under each head, so that any anatomical, morphological, or "biological" fact belonging to any one of them may be looked up as readily as in a card catalogue.

The chapter titles of this second part are essentially as follows: (1) germination and the vegetation of the adult plant, (2) anatomy and development of the root, (3) anatomy and development of the stem, (4) anatomy and development of the leaf, (5) anatomy and development of the flower, fruit, and seed, (6) discussion of affinities, (7) summary and conclusions.

To the morphologist, as distinct from the anatomist, the items of interest recorded are the development of abundant sterile tissue capping the solitary megaspore mother cell; the appearance of an ordinary tetrad; the formation of a chalazal haustorium by the embryo sac, into which the three persistent and very active antipodal cells pass; and the development of a massive supsensor from the filamentous proembryo. The anatomical details are fully presented, and are directed chiefly toward taxonomic distinctions. The "biological" topics deal with the influence of various conditions (especially mesophytic), the crystals of calcium oxalate, starch, tannins, and elaeagnin. The taxonomist will discover that the three genera are quite justifiable, and will receive no shock upon finding that the family belongs just where it is now located in the ENGLER sequence.—J. M. C.

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[17] SERVETTAZ, CAMILLE, Monographie des Eléagnacées. I. Systematik. Beih. Bot. Centralbl. **25**:1–128. *figs. 15.* 1909.

[18] SERVETTAZ, Monographie des Eléagnacées. II. Anatomie et Biologie. *Ibid.* **25**: 129–420. *figs. 140.* 1909.

Cretaceous conifers.—The remarkable results obtained by HOLLICK and JEFFREY from a study of the plant remains preserved in Cretaceous clays of Staten Island have now been published.[19] Much of the material consisted of fragments of lignite, and this required the development of a special technic, which is described. Structural material of leafy twigs and cone scales was also secured. The recent and rapid organization of vascular anatomy as a scientific instrument is well exemplified in this memoir, not only in the identification of material, but still more in the interpretation of its significance.

The descriptions of specimens include three genera of Abietineae, Pinus (3 spp., 2 new), Prepinus (1 sp.), and Pityoxylon (1 sp.); but most important is the surprising display of Araucarineae, 16 genera being included, 9 of which are described as new (*Androvettia, Raritania, Eugeinitzia, Pseudogeinitzia, Anomaspis, Sphenaspis, Dactyolepis, Pityoidolepis, Brachyoxylon*), the remaining 7 genera being Widdringtonites, Thuites, Brachyphyllum, Geinitzia, Protodammara, Araucariopitys, and Araucarioxylon.

The great interest of these results lies in their bearing on the relationship of araucarians to the other conifers. The remains investigated include many that have been referred heretofore, from the appearance of their leafy branches or of their cones, to Taxodineae, Cupressineae, and Podocarpineae. The conifers referred to these tribes are now shown, by the microscopic structure of their leafy twigs and cone scales, to be araucarians, and represent a special subtribe, for which the name Brachyphylloideae is proposed. They are characterized by a special type of wood, the Brachyoxylon type, which is said to "ally them with both the Araucarineae (in the narrower sense) and the Abietineae." The authors believe that the araucarians of today have come from abietineous ancestors through Brachyphylloideae. The species of Pinus investigated are in general more archaic than any living species, and Prepinus shows structural features more primitive than in any other living or extinct conifer.—J. M. C.

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[19] HOLLICK, ARTHUR, AND JEFFREY, EDWARD CHARLES, Studies of Cretaceous coniferous remains from Kreischerville, New York. Mem. N. Y. Bot. Garden **3**:viii+138. *pls. 29.* 1909.